Updated Anthrax Protocol
Distinguishing Anthrax From Influenza

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One method to approach anthrax issues

Know what your local public safety ("911") and public health departments will do when called…i.e. call them now and discuss the problem.

Situation	Action	Who to call
Person calls asking how to handle a suspicious letter or package	Refer them to 911 or equivalent for FD and PD response	
Person comes in with a suspicious package	With gloves, put the package in a plastic bag Have the patient wash their hands; shower IF VISIBLY SOILED	911 or equivalent to respond to the ED to secure the package
Person comes in with a possible exposure (occupation e.g. postal worker, travel to a site of exposure, opened an envelope with threat or powder) BUT **NO** SYMPTOMS	Antibiotics if in your judgment or that of public health the risk is sufficient (Cipro, doxy, or amoxicillin) No dx testing likely to be useful	Public health to begin patient tracking 911 to begin law enforcement investigation
Person comes in WITHOUT epidemiologic exposure and with **NO** symptoms	Reassurance No dx testing	
Person with symptoms possibly consistent with anthrax but WITHOUT known exposure e.g. flulike symptoms WITHOUT rhinorrhea; "spider bite"; bloody diarrhea	For respiratory symptoms, CXR looking for mediastinal lymphadenopathy; sputum cx if obtainable For skin, vesicle-fluid culture and/or biopsy For GI, stool cx For all, blood cultures	Public health for advice and patient tracking Hospital ID for advice

	Consider using anti-anthrax abx	
Persons with consistent symptoms AND potential exposure	As above Antibiotics (use CDC treatment guidelines)	

Anthrax Vs. Influenza

Distinguishing between inhalational anthrax and a typical "flu-like" syndrome may be difficult. The key is to obtain a proper epidemiologic history, i.e. was the patient potentially exposed to anthrax (postal worker, opened an envelope, works in a media office, etc.). This requires keeping in touch with local public health agencies to determine if any recent anthrax exposures have occurred.

IN GENERAL, the following rules may be useful:

1. If the patient has rhinorrhea, it's not anthrax.
2. If the patient is alive and non-toxic after 2 days of illness, it's not anthrax.
3. If the patient doesn't have mediastinal adenopathy by chest CT, it's not anthrax.
4. If the patient has a positive rapid-flu assay, it's not anthrax. NOTE: these tests are not sensitive, and flu-like symptoms are often caused by non-flu viruses, so a negative test does NOT mean it's anthrax. Keep this in mind when deciding to test or not.
5. If the patient is hypoxic, it MAY be anthrax.
6. If the patient is hypotensive, it MAY be anthrax.
7. If the patient has an exposure or risk, it MAY be anthrax.
8. If the patient has a pulmonary syndrome and meningitis or bloody diarrhea, it MAY be anthrax.
9. If the Gram stain of sputum (or CSF if appropriate) shows Gram-positive rods, it is LIKELY anthrax.

Centers for Disease Control and Prevention Treatment Guidelines

TABLE 1. Inhalational anthrax treatment protocol[*,†] for cases associated with this bioterrorism attack

Category	Initial therapy (intravenous)[§,¶]	Duration
Adults	Ciprofloxacin 400 mg every 12 hrs* **or** Doxycycline 100 mg every 12 hrs[††] **and** One or two additional antimicrobials[¶]	IV treatment initially**. Switch to oral antimicrobial therapy when clinically appropriate: Ciprofloxacin 500 mg po BID **or** Doxycycline 100 mg po BID Continue for 60 days (IV and po combined)[§§]
Children	Ciprofloxacin 10–15 mg/kg every 12hrs [¶¶,***] **or** Doxycycline:[†††,††] >8 yrs and >45 kg: 100 mg every 12 hrs >8 yrs and ≤45 kg: 2.2 mg/kg every 12 hrs ≤8 yrs: 2.2 mg/kg every 12 hrs **and** One or two additional antimicrobials[¶]	IV treatment initially**. Switch to oral antimicrobial therapy when clinically appropriate: Ciprofloxacin 10–15 mg/kg po every 12 hrs*** **or** Doxycycline:[†††] >8 yrs and >45 kg: 100 mg po BID >8 yrs and ≤45 kg: 2.2 mg/kg po BID ≤8 yrs: 2.2 mg/kg po BID Continue for 60 days (IV and po combined)[§§]
Pregnant women[§§§]	Same for nonpregnant adults (the high death rate from the infection outweighs the risk posed by the antimicrobial agent)	IV treatment initially. Switch to oral antimicrobial therapy when clinically appropriate.[†] Oral therapy regimens same for nonpregnant adults
Immunocompromised persons	Same for nonimmunocompromised persons and children	Same for nonimmunocompromised persons and children

* For gastrointestinal and oropharyngeal anthrax, use regimens recommended for inhalational anthrax.

† Ciprofloxacin or doxycycline should be considered an essential part of first-line therapy for inhalational anthrax.

§ Steroids may be considered as an adjunct therapy for patients with severe edema and for meningitis based on experience with bacterial meningitis of other etiologies.

¶ Other agents with *in vitro* activity include rifampin, vancomycin, penicillin, ampicillin, chloramphenicol, imipenem, clindamycin, and clarithromycin. Because of concerns of constitutive and inducible beta-lactamases in *Bacillus anthracis*, penicillin and ampicillin should not be used alone. Consultation with an infectious disease specialist is advised.

** Initial therapy may be altered based on clinical course of the patient; one or two antimicrobial agents (e.g., ciprofloxacin or doxycycline) may be adequate as the patient improves.

†† If meningitis is suspected, doxycycline may be less optimal because of poor central nervous system penetration.

§§ Because of the potential persistence of spores after an aerosol exposure, antimicrobial therapy should be continued for 60 days.

¶¶ If intravenous ciprofloxacin is not available, oral ciprofloxacin may be acceptable because it is rapidly and well absorbed from the gastrointestinal tract with no substantial loss by first-pass metabolism. Maximum serum concentrations are attained 1–2 hours after oral dosing but may not be achieved if vomiting or ileus are present.

*** In children, ciprofloxacin dosage should not exceed 1 g/day.

††† The American Academy of Pediatrics recommends treatment of young children with tetracyclines for serious infections (e.g., Rocky Mountain spotted fever).

§§§ Although tetracyclines are not recommended during pregnancy, their use may be indicated for life-threatening illness. Adverse effects on developing teeth and bones are dose related; therefore, doxycycline might be used for a short time (7–14 days) before 6 months of gestation.